

Applicants: YONA, Zvi et al.
Serial No.: 09/818,575

Attorney Docket No.: P-3068-US

7. The apparatus of claim 1, wherein said images are of different polarization.
8. Apparatus comprising:
 - an image source to produce along a common optical axis at least first and second complementary images;
 - relay optics having a relay optics field of view associated with said images;
 - and

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a viewer as an integrated image having a field of view greater than said relay optics field of view.

11. The helmet of claim 10, wherein said reflecting unit comprises diffractive optics formed therein.
12. The helmet of claim 11, wherein said diffractive optics comprises binary optics.
13. The helmet of claim 10 wherein said reflecting unit comprises diffractive optics on its outer faces so to create a total zero optical power for the outer scene.
14. The helmet of claim 10, wherein the number of said images is at least two.
15. The helmet of claim 10, wherein said images are of different wavelength.
16. The helmet of claim 10, wherein said images are of different polarization.
17. A helmet comprising:
 - a reflecting unit with operative connection to said helmet;
 - an image source to produce along a common optical axis at least first and second complementary images;
 - relay optics having a relay optics field of view associated with said images; and
 - a redirecting unit coupled to said image source to direct at least said first and second images to at least first and second different, respective, spatial regions of said reflecting unit, thereby to enable viewing at least said first and

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second images together by an eye of a viewer as an integrated image having a field of view greater than said relay optics field of view, wherein said redirecting unit comprises a controllable tilting mirror.

18. The helmet of claim 16, wherein said redirecting unit comprises a polarization selective reflecting device.
19. A method for producing a wide field of view, said method comprising:
producing along a common optical axis at least first and second complementary images differing in at least one optical property selected from the group consisting of polarization and wavelength;
optically transferring said complementary images through relay optics having a relay optics field of view; and
directing at least said first and second images to at least first and second different, respective, spatial regions of a reflecting unit based on said different optical property to enable viewing at least said first and second images together by an eye of a viewer as an integrated image having a field of view wider than said relay optics field of view.